

The Scholars of Hama

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by: Salah Zaimeche Hama is famed for its huge water wheels and it produced great scholars in geography, mathematics, medicine and much more.

Here we look at a few of them.

Summarised extracts from a full article: [Hama](#) by Salah Zaimeche

Usama ibn Munqidh (fl. 1138-1188 CE) was born in the castle of Shayzar (Caesarea ad Orontem) in the valley of the Orontes, fifteen miles north of Hama. His chief literary work was probably done during the years 1164-1174, a period of relative peace. He wrote many poems, a treatise on rhetoric, *Kitab al-badi'*, etc. At the age of ninety lunar years (that is, about 1182), he composed, or at any rate completed, an autobiography called *Kitab al-ittibar* (Learning by example), which is regarded as being historically important and is one of the first larger works of its kind.



Usama witnessed the first decades of Crusader onslaught and settlement in the Muslim lands, and was himself a fighter against them just as his own father was. His experiences are found in his *Kitab al-Itibar* (Learning by example) - editions and translations of which have been composed by Derenbourg in French, Shuman in German; Porter in English and from an Escorial (Spain) manuscript, Philip Hitti delivered a good version of Usama's observations of crusader life.

Usama tells many stories of the Muslim East under crusader rule, such as Frankish ordeal by water in which the victim was a Muslim man accused with his mother of murdering Christian pilgrims:

"They installed a huge cask and filled it with water. Across it they set a board of wood. They then bound the arms of the man charged with the act, tied a rope around his shoulders and dropped him into the cask; their idea being that in case he was innocent, he would sink in the water and they would then lift him up with the rope so that he might not die in the water; and in case he was guilty, he would not sink in the water. This man did his best to sink when they dropped him in the water, but he could not do it. So he had to submit to their sentence against him - may Allah's curse be upon them! They pierced his eyeballs with red hot awls [an awl is a punching tool used to make a hole in paper, leather and other soft materials]."

Usama also tells how the old crusaders who settled for very long amongst the Muslims, gradually lost their barbaric ways by acquiring Islamic values such as depicted in the following:

"There are some Franks who settled in our land and taken to living like Muslims. These are better than those who have just arrived from their homelands, but they are the exception, and cannot be taken as typical. I came across one of them once when I sent a friend on business to Antioch, which was governed by a friend of mine: Todros Ibn As Safi (Theodoros Sophianos, the Greek commander of the municipality of Antioch). One day he said to my friend: 'A Frankish friend has invited me to visit him; come with me so that you can see how they live.' I went with him," said my friend, "and we came to the house of one of the old knights who

came with the first expedition. This man had retired from the army, and was living on the income of the property he owned in Antioch. He had a fine table brought out, spread with a splendid selection of appetising food. He saw that I was not eating, and said: 'Don't worry please, eat what you like, for I don't eat Frankish food. I have Egyptian cooks and eat only what they serve. No pig's flesh ever comes into my house! So I ate, although cautiously, and then we left. Another day, as I was passing through the market, a Frankish woman advanced on me, addressing me in her barbaric language with words I found incomprehensible. A crowd of Franks gathered round us and I gave myself up for lost, when suddenly this knight appeared, saw me and came up. 'What do you want with this man?' 'This man,' the woman replied, 'killed my brother Urso.' This Urso was a knight from Apamea who was killed by a soldier from Hama. The old man scolded the woman: 'This man is a merchant, a city man, not a fighter, and he lives nowhere near where your brother was killed.' Then he turned on the crowd, which melted away, and shook hands with me. Thus the fact that I ate at his table saved my life."

Yaqut Al-Hamawi (d. 1229) - early scholarly activities consisted in copying and selling manuscripts, whilst studying Arabic and grammar. Yaqut could not settle in one place though and travelled much, first as a merchant, then as a geographer fascinated by places and their diverse populations, dress and ways. He reached Merv, where he stayed for two years. What attracted him there, were the libraries; ten wealthy libraries, two in the chief mosque and the remainder in the madrassas. In 1218, he moved on to Khiva and Balkh; but it was the wrong time. In 1219, the Mongols, led by Genghis Khan from their eastern kingdoms, went on the move west and devastated the whole of eastern Islam (see entries on Merv, Bukhara, Khwarizm). Yaqut himself was nearly caught on one occasion by the first wave of invading Mongols in 1220; he fled, wearing no clothes, but clutching his manuscripts, across Persia to Mosul. From Mosul, he went back to Aleppo, where he remained under the patronage of Al-Qifti, until his death in 1229. During such stay, he still managed to make trips to Palestine, Egypt, Iraq and other parts. Whilst working as a book-seller, Yaqut also worked as an author, but only four of his many works have survived time, best known being his *Mu'ajam al-Udaba* (Dictionary of the learned men); and *Mu'ajam al-Buldan* (Dictionary of countries.) These two works were altogether 33 180 pages long.

Mu'ajam al-Buldan is a vast geographical encyclopaedia which summed up nearly all medieval knowledge of the globe, and in which Yaqut includes almost everything from archaeology, ethnography, history, anthropology, natural sciences, geography, giving coordinates for every place, etc. For every town and city, he gives every name, describes every part with its monuments and wealth, its history, its population, and its leading figures. To obtain information, Yaqut travelled to Persia, Arabia, Iraq and Egypt, and whilst established in Aleppo (in Syria), he built relations and friendships with scientists and historians, including Al-Qifti, then a minister, to whom he dedicated his dictionary. Yaqut's dictionary of countries is not just a collection of facts from other historians, geographers and travellers, but also facts gleaned from his many long travel experiences and from people he met during such travels. That Yaqut was fully conversant with the various concepts of Muslim geographers relating to mathematics and physical and regional geography is well documented in his introduction, which also includes discussions of the geographical and legal terms in the work. Yaqut also used works that came before him, and did not fail to correct them whenever it was judged necessary. Throughout, his work and sources submit to strict observation, and all that was unchecked by facts were removed, Yaqut insisted thereby on the accuracy and rigour of his information. *Mu'Adjam al-Buldan*, thus remains to our day, as Miquel notes, an excellent source for reference.

Abu Ishaq Ibrahim ibn Abd Allah, Al-Hamdani Al-Hamawi, Shihab Al-Din was born in Hama in 1187-8, where he flourished and where he died in 1244-5. He is a Shafiite Qadi (judge) historian who wrote *Tarikh* (History) of the Prophet and of the caliphs down to 1231. He dedicated to the Ayyubid prince Al-Muzaffar Ghazi (ruled 1230-1244/5) an elaborate history of Islam in six volumes (*Al-Tarikh al-Muzaffari*). A good number of Italian authors have made use of the relevant extracts from this work, which they have especially used in their works on Sicily. Hence, Agostino Inveges (1595-1677) has translated into Italian extracts dealing with

Palermo. A century after Inveges, Carusius made translations into Latin of the same extracts. The famed historian of Sicily, Muratory, and Gregorio also made similar usages.

Dating from the thirteenth century several signed celestial globes are preserved today. The earliest and in many ways the loveliest was made in 1225-1226 CE for a nephew of Salah Al-Din in Egypt. The globe has the full set of 48 constellation figures engraved and damascened with copper, with approximately 1025 stars indicated by six different sizes of inlaid silver points corresponding to the various magnitudes. The globe also has a scale showing the sizes of silver points used for the first five magnitudes. The inscriptions, which are in Naskhi script rather than the commonly used Kufic script of this period, are damascened with silver or inlaid with silver wire. According to inscription, the globe was made for al-Malik Kamil, the Ayyubid sultan of Egypt from 1218 to 1238, and the maker of the globe was ('Alam Al-Din) Qaysar ibn Abi Al-Qasim ibn Mu-safir Al-Ashrafial-Hanafi, who was born in upper Egypt in 1178-1179 CE, studied in Egypt, Syria, and finally in Mosul (where the expertise for globes and metals was probably the best in Islam), before turning to Syria where he entered the services of Muzafar II Taqi-ud-din, ruler of Hama from 1229-1244. He was a renowned mathematician and architect' and it is reported that the historian, Qadi, Jamal Al-Din ibn Wasil put it on record that with his help, Qaysar constructed a celestial globe of wood and gilt.' In 1225, Qaysar made a brass globe on the order of the Ayyubid ruler Al-Malik al-Kamil. This globe is unusual in that the horizon ring and stand, which are probably the ones originally made for this globe, have incorporated into them two gnomons and graduated arcs making them elevation dials. The sphere itself is unusual in having Latin zodiacal names and Latin numerals engraved on it, but these may have been added later. That globe was kept until 1809 in the cabinet of Cardinal Borgia at Velletri but is now in the Museo Nazionale of Naples.

It is with regard to the water wheels that Qaysar is most associated with Hama, water wheels which, as Sarton holds, constitute one of the glories of Hama. These water wheels are huge in size as described above, and served to feed homes and farms with water. Only few of them survive today. It is likely that water wheels existed in the West before the crusades, but it is after the crusaders returned from the East that they brought with them the better ones, and much improved ones, from the east, and also a clear understanding of their usefulness. As noted above, these Eastern (Syrian) water wheels can still be seen in Germany in Franconia near Bayreuth.

Abu Abdallah Muhammad Ibn Salim Ibn Wasil, Jamal-ud-din, better known as Ibn Wasil, was born in 1207-8. He flourished in Hama, and between 1260-1 before he was called to Cairo by the Mamluk Sultan Baybars (ruled 1260-1277) who sent him as an envoy to King Manfred of Sicily (ruled from 1258 to 1266). Ibn Wasil remained for a long time at Manfred's court, then returned to Hama, where he was appointed as a chief Qadi and professor in the madrasa, and where he died in 1298. He was a Shafiite doctor, historian, philosopher and mathematician, who also taught Abu'l Fida mathematics and prosody. He dedicated to Manfred a treatise on logic, which he called in his honour *Al-impirurya*, then re-titled *Nukhbat al-Fikr fil mantiq* (selected thoughts on Logic.) He also wrote a history of the Ayyubids, entitled *Kitab Mufarridj al-Kurub fi akhbar bani Ayyub* (the book which dispels sadness with the tales of the Ayyubids). This work was continued down to 1295-6 by Ali Ibn Abd Al-Rahman, secretary to Al-Muzaffar III, Abu'l Fida's predecessor as prince of Hama. Finally, Ibn Wasil composed a commentary on the treatise of prosody of Ibn Hadjib (d. 1249), *Sharh Al-Maqsad Al-Jalil*.

Salah Al-Din ibn Yusuf Al-Kahhal bi Hama (i.e. the eye doctor of Hama) was a Syrian oculist who flourished in Hama in 1296. He wrote for his son a very elaborate treatise of ophthalmology entitled *Nur Al-Uyun wa Jami Al-Funun* (light of the eyes and collection of rules). The manuscripts in Paris of this treatise remained the only one known by the time Leclerc was writing in 1876, and includes 178 pages of 27 lines each. Salah Al-Din composed this work following a request from his son. The treatise is divided into ten books as follows:

Deontological introduction;

1. Definition of the eye anatomy in 22 chapters, including a schematic section (*taqatu al-salibi*) of the eye;
2. Vision, including the geometrical theory of it. Discussion of various theories of vision;
- 3 Eye diseases, their causes, treatment, drugs;
4. Hygiene; affections of the eye lids;
5. Affections of the canthi;
6. Affections of the conjunctiva;
7. Affections of the cornea;
8. Affections of the uvea, and cataract;
9. Intangible affections;
10. Simple drugs after Ibn Al-Baytar.

This plan is identical to that of the *Tadkhirat Al-Kahallin* of Ali ibn Isa of Baghdad, and also contains many borrowings from Ammar ibn Ali Al-Mosuli. The author does not either refrain from citing his predecessors, as well as his master. He also gives an abundance of pictures of instruments, reminding us of Al-Zahrawi who is also amply cited. In book seven, the author cites two cases of cancer, one of which, affecting Emir Azz-ud-din of Hama, he treated with great success. In book eight we find again the different operations described in good detail. He refers to the location of the cataract and describes minutely and lengthily the operation. He describes the special syringe used for the operation, which is often made of glass and which sucks up the cataract, and also dwells on vision, from near or far, and on objects of diverging sizes. The work also cites the authorities upon which the author has relied, and then gives ethical advice, such as that the physicist must be discrete, promoting good, dedicated in his study, detached from the pleasures of the body, and seeking the company of the scholars and the patients.

Abu'l Fida (b. 1273-d. Hama 1331) belongs to the Ayyub family. Salah Al-din having given as a fief Hama and some neighbouring parts to his nephew Taki-ud-din Omar, a descendant of whom is Abu'l Fida. With Usama ibn Munqidh we find ourselves precisely in the same situation: Another great historian and would-be warrior, just as Abu'l Fida, but after a hundred year gap. Nevertheless we have the same struggle against the same crusader enemy, but this time, in the time of Abu'l Fida (13th century, the conflict also involved Mongols on the Christian side, and Mamluks as fighters for Islam. At the time of the birth of Abu'l Fida, his father had been expelled from his Hama principality by the second Mongol invasions (began 1259) under Hulagu, (the first invasions occurred in 1219-22 under Genghis Khan). Abu'l Fida was educated therefore, in Damascus. It was remarkable for him, as noted by de Vaux, to receive any education for at the age of twelve he was already fighting against the crusaders alongside his father and the Mamluks at the taking of the crusader castle of Markab from the Knight Hospitallers. At the age of sixteen, he was still fighting alongside his father and cousin at the recovery of Tripoli from the crusaders (that is roughly a century and half after it was taken by the crusaders from the Muslims in 1109). Years after, he was still fighting the crusaders with another Muslim army for the conquest of the Castle of Roum, which controlled the Euphrates River, and years on, he was under the orders of the Mamluk Sultan Ladjyn fighting the Christians in lesser Armenia. Abu'l Fida tells the story of this Sultan Ladjyn who was of German origins and of the Teutonic Order of Knights; he fought first for Christianity in Italy against the pagans, then came to Syria to fight the Muslims, then converted to Islam, joined the Mamluks, and gradually rose in rank until he became Sultan. In the year

1309, we find Abu'l Fida fighting in Armenia against the Mongol-Armenian alliance, having just returned from pilgrimage to Mecca. In 1316 he was in Mamluk Cairo, appointed as lieutenant for the Sultan, then two years later he was appointed Prince of Hama, thus recovering his ancestors' title. Abu'l Fida narrates his return to his ancestral city:

"All the troops who were there came to meet me. My entry into the city took place on Monday 23 Jumada second, in the afternoon, and lecture was made to the population of my appointment."

Abu'l Fida then went on pilgrimage again in the year 1321, he went into military campaign once more to fight in Asia Minor. It is amidst these military campaigns that Abu'l Fida used to write. In the year 1323, he was back in Hama writing on his Geography and still found time to converse with the learned, and even to undertake some commercial activity. Abu'l Fida's life is thus nothing less than extraordinary. His whole life from childhood is only a series of military campaigns, besides accomplishing pilgrimage to Mecca three times, devoting much time to the embellishment of his capital, and the patronage of learned men, and, of course, writing. It is at the height of glory and power that Abu'l Fida died in Hama in 1331. The poet at his death said:

"He is a prince, to whose home

Glory rushes just as pilgrims do to Mecca

So many marvels were born out of his hand

When this hand held the pen."

Abu'l Fida's main work are *Mukhtassar tarikh al-Bashar* (The Concise History of Humanity or Chronicles) and the *Taqwim al-Buldan* (A Sketch of the countries). Other than his chronicles, and his geography (*Taqwim*), Abu'l Fida was also well learned in many fields such as botany and *materia medica*. He wrote a work in many volumes on medicine titled *Kunash*, and a book on the balance.

His historical *Mukhtassar*, written in 1315 and continued by the author to 1329, is a universal history dealing with pre-Islamic and Islamic history down to 1329. The author relies very much on the great historian of Mosul preceding him, Ibn al-Athir, but also on his own sources, and his own experiences: he was after all at the front of events as a fighter. Such is the importance of this work, it was continued by many after him, including by Ibn Al-Wardi who continued it to 1348, by Ibn al-Shihna al-Halabi who continued it to 1403, and of course was appreciated by early Western orientalis. Many partial editions of the work were made in the West, the first by John Cagnier (1670-1740). It was published in 1754 by Reiske, and has been for a very long time the most important Muslim historical work known in the West.

Abu'l Fida's geographical treatise *Taqwim Al-Buldan* (A Sketch of the countries) has been known quite early in the Latin West, with many translations of it, either partial or complete. It includes twenty eight chapters, with a prologue which contains interesting observations such as the gain or loss of day according to the direction in which one goes around the earth, and the assertion that three quarters of the earth's surface is covered with water. The chapters, each, deal with a definite part of the world in the order indicated:

1, Arabia; 2. Egypt; 3. Maghrib; 4. Equatorial Africa; 5. Spain; 6; Islands of the Mediterranean and the Atlantic; 7. Northern regions of Europe and Asia; 8 Syria; 9 Jazirah; 10. Iraq Arabi'; 11. Khuzistan or Ahwaz; 12. Fars; 13. Kirman; 14 Sijistan; 15: Sind; 16: Hind; 17. China; 18 Eastern islands; 19 Rum (Asia Minor); 20. Armenia....

The 28 chapters are very unequal in length, but are arranged in the same order, that is each is in two parts, the first of which is devoted to a general account of the country (its boundaries, physical peculiarities, political and ethnical divisions, manners and customs, monuments, main roads, etc...) and the second given in tabular form a series of data concerning the main cities: names, sources of information, longitude, latitude, mathematical climate (as indicated by coordinates), physical climate or province, orthography, short description. Abu'l Fida took great pains to establish the orthography and orthophony of place names. His frequent quotations of diverging data (e.g. for coordinates) is typical of his honesty; this was due to his using different sources which he had no means of checking.

A Turkish abbreviated translation in alphabetical order of this geographical treatise was made by Ali Sipahizade in 1588-9. In the mid 17th century it had an unedited translation by Schickard, and Gravius published in London extracts relating to Khwarizm and Transoxonia. A Latin translation was made in Leiden in 1746 by Reiske, whilst Reinaud and de Slane edited the complete text. The French translation by Reinaud and Guyard was completed in 1883. Possibly one of the most important aspects of Abu al-Fida's work is in his observations on the spherical shape of the earth.

A later scholar of Hama is yet another instrument maker. **Shihab Al-din Ahmed ibn Abi Bakr as-Sarraj Al-Hamawi** (d. 1328-9) is the author of several books on scientific instruments and geometrical problems. He wrote a treatise on geometrical problems *Masail handasya*, which is found in Cairo (Riyada 694), a treatise on the hidden astrolabe and hidden sine quadrant (*Risalat al-amal bi rub al-muqantarat*), which is located in Berlin (5869). He is the inventor of a quadrant called *al-muqantarat al-Yusra*, and in the year 1328-9, he constructed an *amila*, which is a universal lamina for Mohammed b. Mohammed at-Tanukhi, which is now found in the Benaki Museum of Athens. The treatise on this instrument, *Risala al-ala al Sarrajiya fi istikhraj al-amal al-afaqiya* (Treatise on the instrument of Ibn Sarraj on determining operations on horizons) is located in Cairo (Miqat 291/1). He wrote *Risala al-amal bi rub al-musattar* (Treatise on operations with the hidden quadrant, which is kept at Rampur (147). Abi Bakr As-Sarraj also wrote a book on sinus quadrants, *ad Durr Al-Gharib fil amal bi dairat al-tayyib* (Rare pearls on operations with the circle for finding sines), which is today at Leyden (187b/4), and which was dedicated to the Turkish Sultan Bayazid I. Ibn Al-Sarraj also wrote *Risala fi'l rub al-mujannah fi ma'arifat jayb al-qaws wa qaws al-jayb* (Treatise on the winged quadrant for finding the Sine of an arc and an arc of a sine, which is kept in both Cairo (miqat 64/5, 138/7) and Istanbul (SM AS 1719). Other works by Ibn al-Sarraj include a treatise on the operations with the quadrant, which is kept in Cairo (Miqat 138/8), a smart treatise on operations with the 'Chest of goose', also available in Cairo (Miqat 242/10), a treatise on an astronomical instrument, and finally he wrote a treatise on operations with balance for change gold, which is also located in Cairo (Fadil Riyada 30/6). Despite this scholar's accomplishments, especially in the field of scientific instrument making, there has been no single study of him and his works, which, once more highlights the shortcomings of efforts directed at recovering Islamic heritage.